

AN INDUSTRY VIEW ON PROCESS COMPETENCIES OF APPAREL DESIGNERS: A STUDY

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ABSTRACT

Process competencies of apparel designers' study were conducted based on an industry view on three concepts such as Process Knowledge; Clothing & Textile and Analysis & Synthesis. Process Knowledge has been analysed based on ten variables such as adaptation of technology, design process, developing profitable products, evaluate product quality, fashion marketing & merchandising, industry regulations, industry terminology, manufacturing process, principles of design and product photography. The criteria of clothing/textile have been analysed based on five different variables such as aesthetic influences, appearance and design for market needs etc.

About 50 questionnaires were distributed randomly to the heads of different types of fashion apparel business establishments across India - like export house, fashion, retail store and fashion house, of which 39 were responded. The response rate is to be 78%. Towards a reliability test, Cronbach alpha (α) analysis has been carried out for 18 variables on process competencies of apparel designers. The alpha value ranges between 0.7241 and 0.8962 which indicates that the variables taken up for the study were acceptable.

The highest number of the total respondents believed that the evaluation of product quality was a very important criterion, followed by developing profitable product and manufacturing process. Product photography was considered least. The same views can be seen among respondents region wise and portfolio wise. In the case of clothing and textile respondents leaned towards design for market needs, followed by aesthetic influences while the least preference was given towards the history of dress/fashion. In the case of analysis and synthesis respondents leaned towards analytical skills and quantitative skills while the least preference was given towards presentation skills.

KEYWORD: Apparel Designer, Competency, Apparel Industry, Industry View & Apparel Competency

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INTRODUCTION

Institutions are experiencing tremendous pressure from employers, students, and the general public to improve student learning and demonstrate program effectiveness. In response, higher education has stepped up efforts to ensure that graduates have the knowledge and skills needed to get hired and be successful. As an institution of fashion and design programs strive to remain viable and relevant in the 21st century, it is vital to identify the competencies that are most important to graduate success. The retailing industry is the second largest employer in India.

REVIEW OF LITERATURE

There exist a number of studies highlighting the gaps between industrial expectations specifically apparel industry and curricula of fashion and clothing. These studies have noted that retailers favour soft skills such as

leadership, decision making, and analytical skills, while academics are more likely to emphasize cognitive skills and content knowledge as important to career success (Mohanraj & Gopalakrishnan 2015, Chida & Brown, 2011; Coates, 1971; Garner & Buckley, 1988; Keech, 1998; McCuaig, Lee, Barker, & Johnson, 1996). The service has taken a more dominant role in nearly all business transactions (Mohanraj & Gopalakrishnan, 2017; Agnihotri, Rapp, Andzulis, & Gabler, 2014), suggesting that soft skills will continue to be valuable skills for apparel designers.

Modern retailers are confronted with a rapidly changing social, political, and cultural landscape; escalating competition; expansion into new geographic areas and channels; forward integration by manufacturers; increasingly savvy consumers; and increased reliance on technology (Kim & Johnson, 2009). However, it seems that no study can be seen on the process competency of apparel designers.

OBJECTIVES

The objective of the study were

- To identify the required process knowledge of apparel designers based on industry view.
- To know the required knowledge on clothing & textile among apparel designers based on industry view.
- To ascertain the requisite skills on analysis / synthesis among apparel designers based on industry view.

HYPOTHESES

The following hypotheses were formulated based on the objectives.

- There exists required process knowledge among apparel designers.
- There exists significant knowledge on clothing & textile among apparel designers.
- There exist requisite skills of apparel designers on analysis / synthesis.

PROCESS COMPETENCIES

Process competencies of apparel designers' study were conducted based on an industry view on three concepts such as process knowledge, clothing & textile, analysis and synthesis.

SAMPLE

About 50 questionnaires were distributed randomly to the heads of different types of fashion apparel industries like export house, a fashion retail store and fashion house across India, of which 39 were responded. The response rate is to be 78%.

DATA RELIABILITY

Reliability is concerned with the consistency of a variable. There are two identifiable aspects of this issue: external and internal reliability. Nowadays, the most common method of estimating internal reliability is Cronbach alpha (α). The formula used for internal reliability is

$$\alpha = \frac{K}{K-1} \left(1 - \frac{\sum_{i=1}^K \sigma_{Y_i}^2}{\sigma_X^2} \right)$$

A commonly accepted rules for describing internal consistency using Cronbach alpha (Cronbach, Lee and Shavelson 2004) are $\alpha \geq 0.9$ (Excellent), $0.9 > \alpha \geq 0.8$ (Good), $0.8 > \alpha \geq 0.7$ (Acceptable), $0.7 > \alpha \geq 0.6$ (Questionable), $0.6 > \alpha \geq 0.5$ (Poor) and $0.5 > \alpha$ (Unacceptable).

In order to identify the reliability of the variables, Cronbach alpha (α) analysis has been carried out for 18 variables on process competencies of apparel designers. The Alpha value for the same are calculated and shown in Table 1, which indicates that all the variables are acceptable for further studies.

Table 1: Reliability Test

S. No.	Concept	No. of Variables	Cronbach Alpha Value
1	Process Knowledge	10	0.8503
2	Clothing & Textile	5	0.7241
3	Analysis and Synthesis	3	0.8962
Total		18	0.9411

The alpha value ranges between 0.7241 and 0.8962 which indicates that the variables taken up for the study were acceptable.

Process Knowledge

Process Knowledge has been analysed based on ten variables such as adaptation of technology, design process, developing profitable products, evaluate product quality, fashion marketing & merchandising, industry regulations, industry terminology, manufacturing process, principles of design and product photography. The opinions of the respondents were given in Table 2. The mean and standard deviation were calculated based on the opinion. The ranks were ascertained based on mean and standard deviation, which were shown in Table 2.

Table 2: Process Knowledge

S. No	Description	Not Important		Least Important		Important		Very Important		Must		Mean	Std.	Rank
1	Adaptation of Technology	1	2.6%	0	.0%	4	10.3%	20	51.3%	14	35.9%	4.18	.823	9
2	Design process	0	.0%	2	5.1%	1	2.6%	18	46.2%	18	46.2%	4.33	.772	4
3	Developing profitable products	0	.0%	0	.0%	3	7.7%	12	30.8%	24	61.5%	4.54	.643	2
4	Evaluate product quality	0	.0%	0	.0%	3	7.7%	7	17.9%	29	74.4%	4.67	.621	1
5	Fashion Marketing & Merchandising	0	.0%	1	2.6%	4	10.3%	19	48.7%	15	38.5%	4.23	.742	8
6	Industry regulations	0	.0%	1	2.6%	3	7.7%	21	53.8%	14	35.9%	4.23	.706	7
7	Industry terminology	0	.0%	1	2.6%	2	5.1%	21	53.8%	15	38.5%	4.28	.686	6
8	Manufacturing process	0	.0%	1	2.6%	2	5.1%	17	43.6%	19	48.7%	4.38	.711	3
9	Principles of design	0	.0%	2	5.1%	2	5.1%	17	43.6%	18	46.2%	4.31	.800	5
10	Product photography	1	2.6%	1	2.6%	13	33.3%	9	23.1%	15	38.5%	3.92	1.036	10

The highest number of the total respondents believed that the evaluation of product quality was a very important criterion, followed by developing profitable product and manufacturing process. Product photography was considered least.

Table 3 is a representation of the analysis of the criteria for process knowledge extended to southern region compared with other regions.

Table 3: Process Knowledge Vs Region

S. No	Description	Southern			Other		
		Mean	Std.	Rank	Mean	Std.	Rank
1	Adaptation of Technology	4.41	.618	4	4.00	.926	9
2	Design process	4.29	.849	6	4.36	.727	3
3	Developing profitable products	4.76	.562	2	4.36	.658	2
4	Evaluate product quality	4.82	.529	1	4.55	.671	1
5	Fashion Marketing & Merchandising	4.29	.849	6	4.18	.664	8
6	Industry regulations	4.18	.728	9	4.27	.703	6
7	Industry terminology	4.29	.849	6	4.27	.550	5
8	Manufacturing process	4.47	.800	3	4.32	.646	4
9	Principles of design	4.41	.795	5	4.23	.813	7
10	Product photography	4.06	.966	10	3.82	1.097	10

The mean value of southern region ranges between 4.06 and 4.82 with a standard deviation ranges between 0.529 and 0.966 which indicates that all the variables unanimous response towards agree and strongly agree. However the first preference was indicated to evaluate product quality. It is followed by developing profitable products; Manufacturing process and adaption of technology. The least preferences were given for product photography and Industry regulation.

In the case of another region, the mean value ranges between 3.82 and 4.55 which indicate the opinion lies between agree and strongly agree. The first two preferences such as evaluate product quality and developing profitable products were identical whereas the third preference were indicated do design process instead of manufacturing process.

The highest number of the total respondents believed that the evaluation of product quality was a very important criterion, followed by developing profitable product and product photography was considered lost by both southern and other regions.

The analysis of the criteria under Process Knowledge extended to Portfolio such as design, merchandising and production and the same has been listed in accordance with variables and is depicted under Table 4.

Table 4: Process Knowledge Vs Portfolio

S. No.	Description	Design			Merchandising			Production		
		Mean	Std.	Rank	Mean	Std.	Rank	Mean	Std.	Rank
1	Adaptation of Technology	4.31	.751	5	4.17	.985	8	4.00	.535	8
2	Design process	4.46	.519	4	4.28	1.018	7	4.25	.463	3
3	Developing profitable products	4.69	.630	1	4.44	.616	4	4.50	.756	2
4	Evaluate product quality	4.54	.776	3	4.72	.575	1	4.75	.463	1
5	Fashion Marketing & Merchandising	4.15	.987	8	4.33	.686	6	4.13	.354	4
6	Industry regulations	4.08	.862	9	4.44	.511	3	4.00	.756	9
7	Industry terminology	4.23	.927	7	4.39	.502	5	4.13	.641	6
8	Manufacturing process	4.31	.947	6	4.56	.511	2	4.13	.641	7
9	Principles of design	4.62	.506	2	4.11	.963	9	4.25	.707	4
10	Product photography	4.08	.954	10	3.83	1.150	10	3.88	.991	10

Table 4 followed an evaluation of product quality as first preference under merchandising and production, while third preference under design. Conversely, developing profitable products was considered first preference for design while having been second for production. Product photography was held as the least preferred under all the three domains.

Table 5 is a representation of the analysis of the criteria for process knowledge extended to business type with variables.

Table 5: Process Knowledge Vs Business Type

S. No.	Description	Export House			Retail			Fashion house		
		Mean	Std.	Rank	Mean	Std.	Rank	Mean	Std.	Rank
1	Adaptation of Technology	4.57	.514	3	4.10	.568	7	3.87	1.060	10
2	Design process	4.36	.842	7	4.50	.527	2	4.20	.862	6
3	Developing profitable products	4.93	.267	1	4.30	.483	5	4.33	.816	4
4	Evaluate product quality	4.86	.535	2	4.70	.483	1	4.47	.743	1
5	Fashion Marketing & Merchandising	4.50	.855	4	4.00	.667	9	4.13	.640	7
6	Industry regulations	4.21	.802	9	4.10	.568	7	4.33	.724	2
7	Industry terminology	4.29	.825	8	4.20	.422	6	4.33	.724	2
8	Manufacturing process	4.50	.855	4	4.40	.516	3	4.27	.704	5
9	Principles of design	4.50	.855	4	4.40	.843	4	4.07	.704	8
10	Product photography	3.86	1.027	10	4.00	.943	10	3.93	1.163	9

It is seen that evaluation of product quality was considered to be the vital criterion for retail houses and fashion houses, whereas inclusion of evaluation of product quality as well as development of profitable products held a primary role in export houses. Similarly, fashion houses held industry regulations and industry terminologies to the same standard as a second preference, whereas, for retail houses the second preference was design process.

Product photography was considered the least preference for retail and export houses, while second least for fashion houses, which held adaptation of technology as the least preference.

The rank order for Process Knowledge Is listed in accordance with variables under Table 6.

Table 6: Process Knowledge – Rank Order

S. No	Description	OVER ALL	Region		Portfolio			Business Type		
			Southern	Other	Design	Merchandising	Production	Export House	Retail	Fashion House
1	Adaptation of Technology	9	4	9	5	8	8	3	7	10
2	Design process	4	6	3	4	7	3	7	2	6
3	Developing profitable products	2	2	2	1	4	2	1	5	4
4	Evaluate product quality	1	1	1	3	1	1	2	1	1
5	Fashion Marketing & Merchandising	8	6	8	8	6	4	4	9	7
6	Industry regulations	7	9	6	9	3	9	9	7	2
7	Industry terminology	6	6	5	7	5	6	8	6	2
8	Manufacturing process	3	3	4	6	2	7	4	3	5
9	Principles of design	5	5	7	2	9	4	4	4	8
10	Product photography	10	10	10	10	10	10	10	10	9

Evaluate product quality was held at the first preference against region, portfolio and, business type under Process Knowledge. Developing profitable products was held at second preference for production and region. Product photography was held at least preference by all, excluding fashion houses which held it at second to last preference.

In this study, the criteria of clothing/textile have been analysed based on five different variables such as aesthetic influences, appearance and design for market needs etc. The opinions of respondents were given in Table 7.

Table 7: Clothing/Textile

S. No.	Description	Not Required		Required		V. Much Required		V. Important		Must		Mean	Std	Rank
1	Aesthetic influences	1	2.6%	0	.0%	3	7.7%	16	41.0%	19	48.7%	4.33	.838	2
2	Appearance	1	2.6%	1	2.6%	6	15.4%	10	25.6%	21	53.8%	4.26	.993	3
3	Design for market needs	0	.0%	1	2.6%	1	2.6%	13	33.3%	24	61.5%	4.54	.682	1
4	Dress/human interactions	0	.0%	0	.0%	6	15.4%	19	48.7%	14	35.9%	4.21	.695	4
5	History of dress/fashion	1	2.6%	1	2.6%	8	20.5%	18	46.2%	11	28.2%	3.95	.916	5

It is seen that the highest number of the total respondents leaned towards design for market needs, followed by aesthetic influences while the least preference was given towards the history of dress/fashion.

Table 8 is a representation of the analysis of the criteria for clothing/textile extended to region.

Table 8: Clothing/Textile Vs Region

S. No	Description	Southern			Other		
		Mean	Std.	Rank	Mean	Std.	Rank
1	Aesthetic influences	4.41	.618	2	4.27	.985	3
2	Appearance	3.94	1.029	4	4.50	.913	1
3	Design for market needs	4.76	.437	1	4.36	.790	2
4	Dress/human interactions	4.29	.686	3	4.14	.710	4
5	History of dress/fashion	3.82	1.074	5	4.05	.785	5

Design for market needs is considered to be the first preference and aesthetic influences as the second preference by southern regions. Similarly, appearance and design for market needs were considered as first and second preferences, respectively by other regions, while history of dress/fashion was considered the least preference by both regions.

The analysis of the criterion under clothing/textile extended against portfolio was depicted under Table 9.

Table 9: Clothing/Textile Vs Portfolio

S. No.	Description	Design			Merchandising			Production		
		Mean	Std.	Rank	Mean	Std.	Rank	Mean	Std.	Rank
1	Aesthetic influences	4.38	.650	3	4.28	1.018	2	4.38	.744	2
2	Appearance	4.54	.660	2	4.11	1.132	4	4.13	1.126	4
3	Design for market needs	4.69	.480	1	4.44	.856	1	4.50	.535	1
4	Dress/human interactions	4.31	.751	4	4.11	.676	3	4.25	.707	3
5	History of dress/fashion	4.15	.801	5	3.83	1.043	5	3.88	.835	5

Table 9 followed design for marketing needs as first preference under merchandising and production and design. Contrary to this merchandising and production domains held aesthetic influences as a second preference, whereas, for design domain the second preference was appearance. The history of fashion/dress was held as the least preferred under all the three domains.

The analysis of the criteria under clothing/textile extended against business type is listed in accordance with variables and is depicted under Table 10.

Table 10: Clothing/Textile Vs Business Type

S. No.	Description	Export House			Retail			Fashion house		
		Mean	Std.	Rank	Mean	Std.	Rank	Mean	Std.	Rank
1	Aesthetic influences	4.57	.646	2	4.60	.516	2	3.93	1.033	2
2	Appearance	4.29	.914	4	4.80	.422	1	3.87	1.187	3
3	Design for market needs	4.93	.267	1	4.10	.876	5	4.47	.640	1
4	Dress/human interactions	4.50	.650	3	4.40	.516	4	3.80	.676	4
5	History of dress/fashion	3.79	1.122	5	4.50	.527	3	3.73	.799	5

Design for market needs was held at the first preference for fashion and export houses, similar appearance was listed first under retail, while aesthetic influences were held as the second preference by all the three domains. Fashion and export houses held history of dress/fashion as least preferred while design houses considered design for market needs as the last preference.

The rank order for Clothing/Textile is listed in accordance with variables under Table 11.

Table 11: Clothing/Textile – Rank Order

S. No	Description	OVER ALL	Region		Portfolio			Business Type		
			Southern	Other	Design	Merchandising	Production	Export House	Retail	Fashion House
1	Aesthetic influences	2	2	3	3	2	2	2	2	2
2	Appearance	3	4	1	2	4	4	4	1	3
3	Design for market needs	1	1	2	1	1	1	1	5	1
4	Dress/human interactions	4	3	4	4	3	3	3	4	4
5	History of dress/fashion	5	5	5	5	5	5	5	3	5

Design for market needs was held at the first preference against region, portfolio and, business type under Process Knowledge. Aesthetic influences were held at second preference. The history of dress/fashion was held at least preference by all, excluding retail.

The analysis of the criteria under analysis/synthesis is listed in accordance with variables such as analytical skills, presentation skills and quantitative skills and is depicted under Table 12.

Table 12: Analysis / Synthesis

S. No	Description	Not Required		Required		V.Much Required		V. Important		Must		Mean	Std	Rank
		1	2.6%	0	.0%	3	7.7%	22	56.4%	13	33.3%			
1	Analytical skill	1	2.6%	0	.0%	3	7.7%	22	56.4%	13	33.3%	4.18	.790	3
2	Presentation skill	1	2.6%	1	2.6%	0	.0%	11	28.2%	26	66.7%	4.54	.854	1
3	Quantitative skills	1	2.6%	0	.0%	3	7.7%	19	48.7%	16	41.0%	4.26	.818	2

It is seen that the highest number of the total respondents leaned towards analytical skills and quantitative skills while the least preference was given towards presentation skills.

Table 13 is a representation of the analysis of the criteria for Analysis/Synthesis extended to the Region.

Table 13: Analysis / Synthesis Vs Region

S. No	Description	Southern			Other		
		Mean	Std.	Rank	Mean	Std.	Rank
1	Analytical skill	4.35	.493	2	4.05	.950	3
2	Presentation skill	4.76	.437	1	4.36	1.049	1
3	Quantitative skills	4.35	.493	2	4.18	1.006	2

The highest number of the total respondents believed that the presentation skills were very important criteria, followed by quantitative skills. Analytical skills were considered the least.

The analysis of the criteria under Analysis / Synthesis Vs Portfolio is listed in accordance with variables under Table 14.

Table 14: Analysis / Synthesis Vs Portfolio

S. No.	Description	Design			Merchandising			Production		
		Mean	Std.	Rank	Mean	Std.	Rank	Mean	Std.	Rank
1	Analytical skill	4.15	.689	2	4.22	.943	3	4.13	.641	2
2	Presentation skill	4.54	.877	1	4.50	.985	1	4.62	.518	1
3	Quantitative skills	4.08	.641	3	4.44	.984	2	4.13	.641	2

A presentation skill was held at the first preference under all three domains. Similarly, fashion houses held analytical and quantitative skills to the same standard as a second preference, whereas, Merchandising domain held quantitative skills and design domain held analytical skills as their second preferences respectively. Vice versa was held as least preferred by both the domains.

Table 15 depicts the analysis of the criterion under Analysis/Synthesis extended to business type.

Table 15: Analysis / Synthesis Vs Business Type

S. No.	Description	Export House			Retail			Fashion House		
		Mean	Std.	Rank	Mean	Std.	Rank	Mean	Std.	Rank
1	Analytical skill	4.36	.497	3	4.20	.422	3	4.00	1.134	2
2	Presentation skill	4.79	.426	1	4.60	.516	1	4.27	1.223	1
3	Quantitative skills	4.43	.514	2	4.40	.516	2	4.00	1.134	2

Table 15 followed presentation skills as first preference under all three domains. Similarly, fashion houses held analytical and quantitative skills to the same standard as a second preference; whereas, for export houses and retail houses the second preference was a quantitative skill. Analytical skills were held at the least preferred by both export and retail houses.

The rank order for Analysis / Synthesis is listed in accordance with variables under Table 16.

Table 16: Analysis / Synthesis – Rank Order

S. No	Description	OVER ALL	Region		Portfolio			Business Type		
			Southern	Other	Design	Merchandising	Production	Export House	Retail	Fashion House
1	Analytical skill	3	2	3	2	3	2	3	3	2
2	Presentation skill	1	1	1	1	1	1	1	1	1
3	Quantitative skills	2	2	2	3	2	2	2	2	2

Presentation skill was held at the first preference against region, portfolio and, business type under Process Knowledge. Quantitative skills were held at second preference. Analytical skill was held at least preference by all,

excluding production, fashion house, design and southern region.

FINDINGS

- The highest number of the total respondents believed that the evaluation of product quality was a very important criterion, followed by developing profitable product and manufacturing process. Product photography was considered least
- Evaluation of product quality was considered to be the vital criterion for retail houses and fashion houses, whereas inclusive of evaluation of product quality as well as development of profitable products held a primary role for export houses. Similarly, fashion houses held industry regulations and industry terminologies to the same standard as a second preference, whereas, for retail houses the second preference was design process.
- The highest number of the total respondents leaned towards design for market needs, followed by aesthetic influences while the least preference was given towards the history of dress/fashion.
- The highest number of the total respondents believed that the presentation skills were very important criteria, followed by quantitative skills. Analytical skills were considered the least.

CONCLUSIONS

The study of industrial view on process competences among apparel designers was carried out with the objectives to identify the required process knowledge. Similarly to know the required knowledge on clothing & textile and to ascertain the requisite skills on analysis / synthesis among apparel designers based on industry view.

It is believed that the evaluation of product quality was a considered as important criteria, followed by developing profitable product and manufacturing process. Product photography was considered least. The same views can be seen among respondents region wise and portfolio wise. Further, this study indicates that the apparel designers leaned towards design for market needs, followed by aesthetic influences while the least preference was given towards the history of dress/fashion. In the case of analysis and synthesis, the apparel designers leaned towards analytical skills and quantitative skills while the least preference was given towards presentation skills.

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13. *University C&T programs have prepared graduates for merchandising careers in the retail industry for decades (Garner & Buckley, 1988; Hurst & Good, 2009; Laughlin & Kean, 1995).*